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CZECHOSLOVAK COLD STORAGE AND REFRIGERATION

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The Czechoslovak cold storage and refrigeration industry has seen several basic changes during the time of its development. During the first quarter of 1951, maximum capacities for the manufacture of cold storage and refrigeration equipment were reviewed. Up to the first quarter of 1951, the maximum capacity was established at a limit of 20,000 calories per hour, at a volatilization temperature of 10 degrees centigrade, a condensation temperature of 25 degrees centigrade, and a supercooling temperature of plus 15 degrees centigrade. All cooling plants up to these limits were manufactured by the Kovotechna National Enterprise in Prague. This national enterprise embraces the following former firms and establishments: Frigera, Tatra, Horak Brothers, Starman, Srutek, Banska and Hutni, Povazske Strojirny, and others.

Kovotechna's research section is located in Prague-Smichov, and all new prototypes are designed, tested, and examined there. The main plant is in Kolin. Up to the first quarter of 1951, Kovotechna had the following production program: manufacture of all cooling plants of a capacity of 100 to 20,000 calories per hour, which were destined for private and industrial purposes. One of the newest products of this enterprise was a mechanical refrigerator car, mainly utilized for transportation of frozen goods and perishable foodstuffs. This undertaking is comparatively well organized and, according to available information, it is developing well.

Industrial Refrigeration Plants in First Quarter 1951

Industrial refrigeration plants are defined as those having a minimum capacity of 20,000 calories per hour. The following enterprises produce industrial refrigeration plants: Prvni Brnenska Strojirna v Brne (First Brno Machine-Tool Factory in Brno); CKD (Ceskomoravska-Kolben-Danek) Sokolovo, Prague; CKD Sokolovo, Chocen, (formerly Mraz); Skoda Works, Hradec Kralove; Skoda Works, Plzen. All of the firms mentioned manufacture refrigeration plants for all industrial needs.

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As far as technique is concerned, the Brno Machine-Tool Factory is in the lead and has attempted to mass produce its products. It was the first in Czechoslovakia to begin manufacturing two-phase compressors equipped with differential pistons, with the exception of CKD Sokolovo, Prague. The latter extorted manufacturing and work shop plans for the above compressor types from the Brno concern by certain methods of pressure. In addition to these compressors, also manufactured by the Brno enterprise in the single-phase variety and considered to be the best, this factory produced plate refrigerators, freezing tunnels, generators for producing ice, etc.

On orders from the general management of the Czechoslovak heavy machine industry, a special development section for standardization of industrial refrigeration plants was created. Every enterprise dispatched a representative to this central body. The work of the standardization office came to an end in the fall of 1950, upon the announcement of another change in the industrial production program. CKD Sokolovo took over the completed as well as the unfinished work of this section.

In 1949, Czechoslovak enterprises began delivery of cold storage and refrigeration equipment to the USSR. A total of 100 complete plants were involved. To date, 70 percent of the deliveries have been made. The following enterprises participated: First Brno Machine-Tool Factory, 45 percent; CKD Sokolovo, Prague, 30 percent; Skoda Works, Hradec Kralove, 25 percent. It is estimated that the equipment is destined for the food industry and partially also for mining and other industrial purposes.

CKD Sokolovo, Prague, is at present testing for the USSR a freon plant with a capacity of 4 million calories an hour and a turbocompressor drive; two other plants are under construction at the factory. There are certain indications that these plants are destined for aircraft-testing wind tunnels, to operate at temperatures of minus 40 degrees centigrade.

Reorganization During First Quarter 1951

On the basis of negotiations by the CZTS (Ceskoslovenske Zavody Tezkeho Strojirenstvi, Czechoslovak Heavy Machine-Building Enterprises), a preliminary agreement between Kovotechna and enterprises subordinate to the CZTS was reached, raising the limit of cold storage and refrigeration equipment to a capacity of 150,000 calories an hour. As a result of this agreement, the following reorganization took place: CKD Sokolovo, Chocen (formerly Mraz), which up to now was an independent enterprise, was amalgamated with Kovotechna. CKD Sokolovo, Prague, was accorded a sort of monopoly to produce refrigeration plants of a capacity of over 150,000 calories an hour. The other enterprises, such as the First Brno Machine Tool Factory and the Skoda Works in Hradec Kralove and Plzen are to continue production only until they satisfy outstanding orders. Thus all future production of these plants is halted. Some 25 percent of the designers of the Brno Machine-Tool Factory were placed at the disposal of Kovotechna, where they are to work on cold-storage plants of a capacity of 20,000 through 150,000 calories an hour.

Czechoslovak Cold Storage and Refrigeration Plant Network

With the end of the war, the government made plans to erect cold storage and refrigeration plants throughout the country. On the basis of this requirement, Ceskoslovenske Chladirny a Mrazirny (Czechoslovak Refrigeration Plants National Enterprise) was created, with headquarters in Prague. This enterprise took over the nationalized private firms and began to build new installations. In older buildings, refrigeration is accomplished by old, uneconomical methods; in the new buildings, refrigeration is modernized. Parts of the old buildings

are fitted out as refrigeration plants and parts as frozen storage. In the modern plants, so-called amphibious spaces are installed, which can be either refrigeration plants or frozen goods storage, with a little manipulation.

The following is a list of cold storage and refrigeration plants in Czechoslovakia:

Bohemia

Litomerice	12,000 square meters of storage area, modern equipment, converted old brewery, multistory building with basement and rail connection.
Tabor	Multistory building, 3,000-square-meter storage area, modern equipment. Began operation in J.1951 (sic). Direct connection with the slaughterhouse is planned.
Prisovice u Turnova	Enterprise is 60 percent newly constructed with modern equipment. Ground-floor building, 6,000 square meters capacity. Organizationally a part of the Ustredi Pro Hospodareni Se Zemedelskymi Vyrobky (UHZV, Center for Management of Agricultural Products).
Karlovy Vary	Cold storage and refrigeration plants, 2,500 square meters.
Prague	Cold storage and refrigeration plants, formerly Sipan and Medek, capacity 3,000 square meters; older equipment, warehouse at Maniny landing, multistory building with a capacity of 3,800 square meters.
Opava	Cold storage and refrigeration plants, converted sugar warehouse, multistory building, modern equipment; to begin operation in 1952, capacity 3,500 square meters.
Lanskroun	Cold storage and refrigeration plants, multistory building, capacity 2,800 square meters. Goods delivered by truck.
Olomouc	Cold storage and refrigeration plants, formerly Andersen, two buildings. (a) One-story construction, processes incoming goods; basement houses machinery, modern refrigeration equipment and frozen goods storage. (b) Converted multistory building, to begin operation in 1952, modern equipment. Combined capacity of buildings a and b, 5,000 square meters.

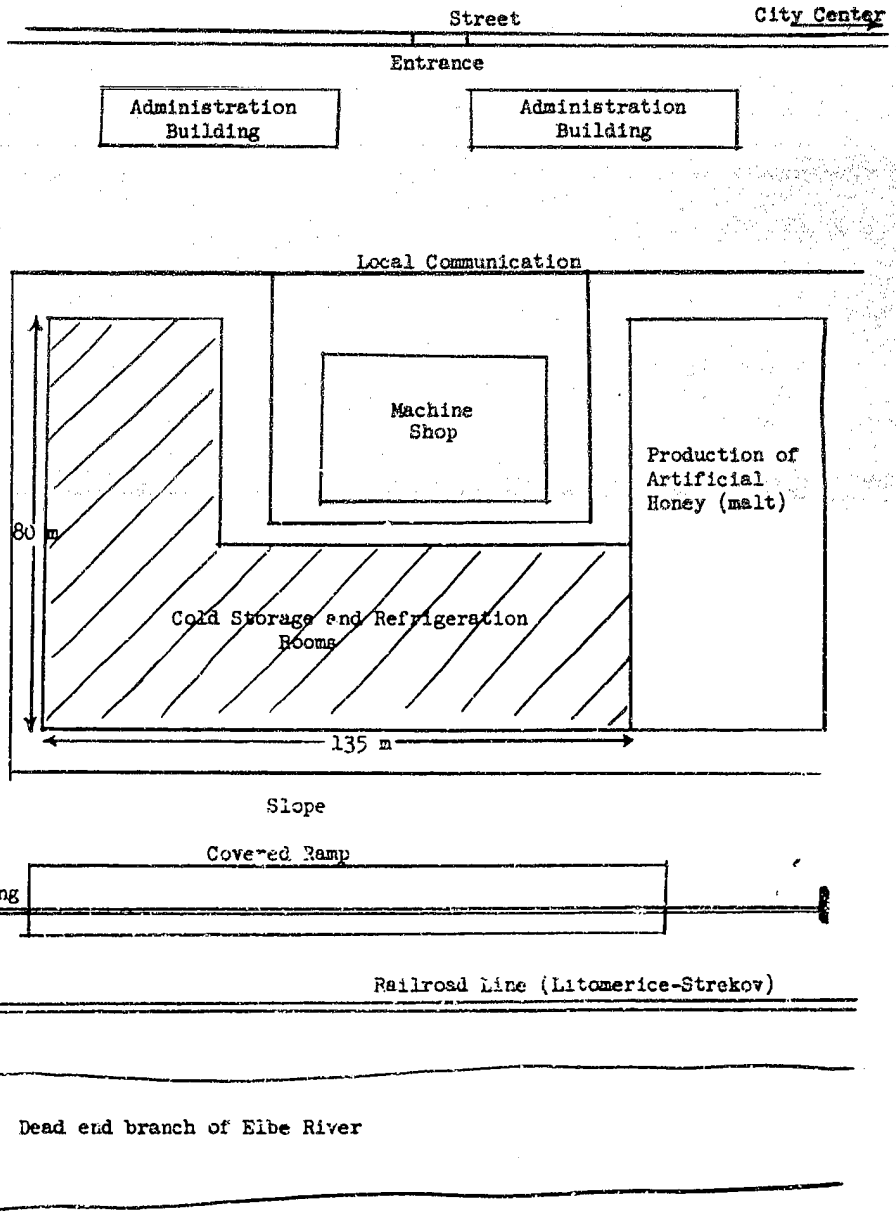
Uhersky Brod	Formerly Brustik, new building, modern equipment, capacity 1,500 square meters.
Velke Pavlovice	Converted one-story building, 50 percent of machinery is modern, 5,000-square-meter capacity; organizationally part of the UHZV.
Slovakia	Several five-story warehouses with a capacity of 3,500 square meters each are to be erected in Slovakia for cold storage and refrigeration. Construction began this year in Bratislava and Zvolen and both plants are to be in operation by the end of 1951.
Sladkovicovo	A one-story sugar refinery and a multi-story building with modern equipment, rail connection; capacity, 3,400 square meters.
Cifer	"Slodob" Company, modern building and equipment; capacity, 2,000 square meters.
Presov	"Slodob" Company, capacity 2,000 square meters.
Presov	Cold storage and refrigeration plants. Modern production methods (use of rollers). Capacity, three railroad cars of ice per day. A warehouse with a capacity for 80 cars (800 hundredweight) and rail connection. Ice from this plant cools rail cars on their way to Cerna pri Copu, where they are loaded with USSR goods and shipped throughout Czechoslovakia.

The Czechoslovak Refrigeration Plants National Enterprise is now using 12 mechanical refrigerator cars. By the end of this year, Kovotechna is to deliver six more, and during the next year an additional six cars are planned for delivery. By the end of 1952, a total of 24 mechanical refrigerator cars should be in use.

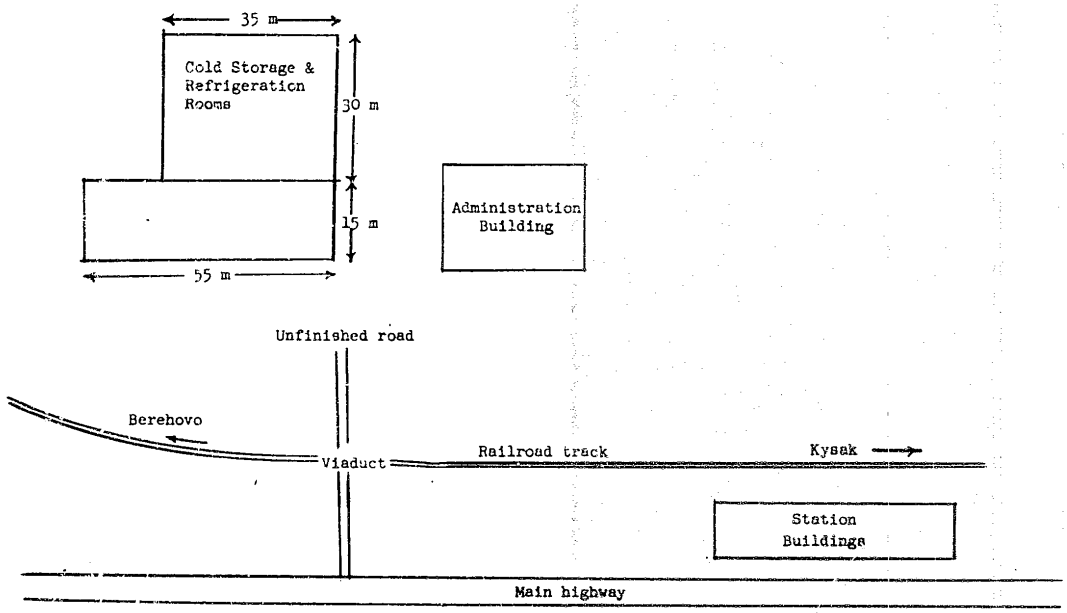
It is noteworthy that plans for all building construction must be in accordance with regulations of the Ministry of National Defense and the Ministry of National Security.

The following sketches indicate the location of cold-storage plants in Litomerice, Presov, and Prague Maniny.

COLD-STORAGE PLANTS IN LITOMERICE



COLD-STORAGE PLANTS IN PRESOV



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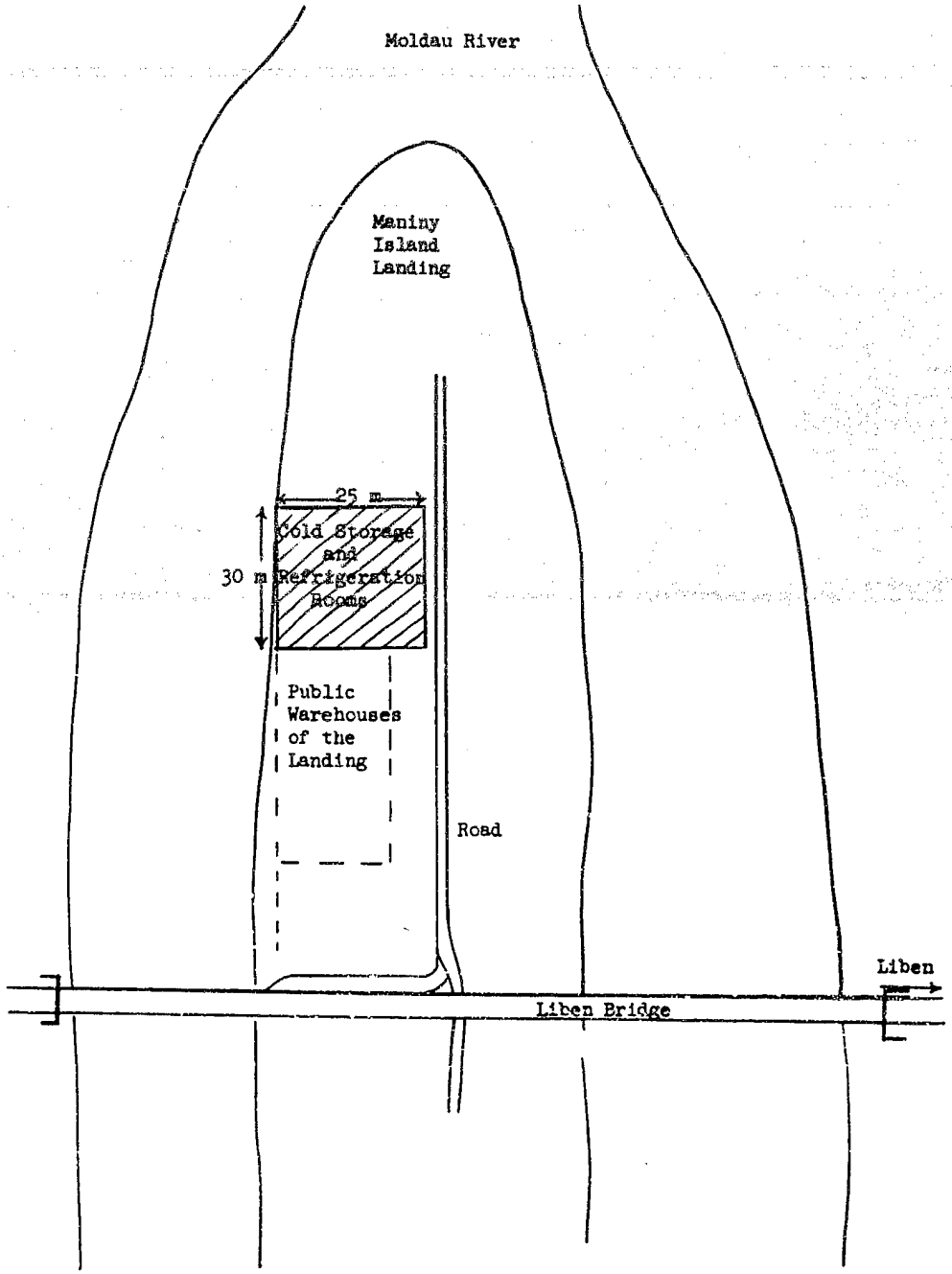
COLD-STORAGE PLANTS IN PRAGUE MANINY



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